Implementing Systems Change to Improve Women's Health Care:

National Community Centers of Excellence

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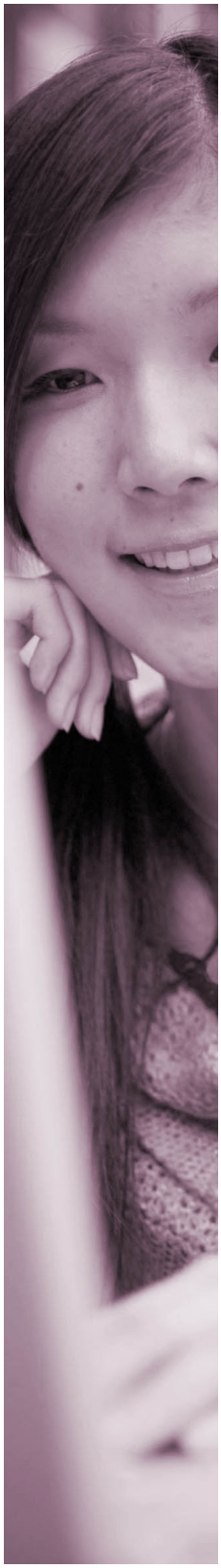

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FOREWORD

The U.S. Department of Health and Human Services (DHHS) Office on Women's Health (OWH), in collaboration with the DHHS Office of Minority Health (OMH) and the Health Resources and Services Administration (HRSA) Office of Minority and Special Populations, implemented the National Community Centers of Excellence in Women's Health (CCOE) program in September 2000. The CCOE program provides funding to existing community-based organizations (CBOs) to improve and enhance the services they provide to women. Many of the CCOEs achieved this goal by establishing dynamic partnerships with existing community organizations to expand the services available to their clients, thus providing greater access to those services, enhancing continuity in care, and reducing fragmentation in service delivery.

According to an external evaluation conducted in 2003, the CCOE program has proved to be an effective way to deliver comprehensive, integrated, multidisciplinary services to women across the lifespan. Centers have been established in a wide range of community-based health care systems, including Federally Qualified Health Centers (FQHCs), community health service organizations, community hospitals, and an Area Health Education Center (AHEC). Centers are located in rural, suburban, and urban areas, and they serve a diverse racial/ethnic population that includes adolescents and elderly women, as well as incarcerated women. Based on the evaluation, the CCOE model of care appears to be effective in serving diverse communities and diverse populations.

The CCOEs also serve as a unique national model for efforts to implement health care systems change. Despite their diversity, each Center was asked to implement the national CCOE model to improve care to women, and each did so successfully, although with greater successes in some areas than in others. In that light, the CCOEs can be viewed as a national case study on how to improve women's health care via a systems change initiative.

Since the award of the first CCOE grants in 2000, OWH has received hundreds of inquiries from community organizations interested in improving care for women. Our hope is that this document will assist these organizations to implement health care systems change to improve the health of all populations in their communities.

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EXECUTIVE SUMMARY

Purpose. This report has three main purposes. Its first purpose is to provide a synthesis of literature on successful systems change initiatives within health care organizations and related best practices. Its second purpose is to review how these best practices were incorporated into the National Community Centers of Excellence in Women's Health (CCOEs) systems change effort, and to describe the specific steps required to implement and evaluate systems change efforts. Its final purpose is to discuss challenges met and addressed in successful change initiatives, including examples and lessons learned from the CCOE program, and to describe methods to sustain long-term systems change.

Materials and Methods. A literature review to identify best practices and other details of systems change initiatives was conducted using the following databases: Medline (PubMed); the Cumulative Index to Nursing & Allied Health Literature (CINAHL); MDConsult text and journal search; Google Scholar; and an extensive bibliographic search of collected literature. Keywords and phrases searched included combinations of "systems change," "health care," "implementation," "guidelines," "preventive health," "best practices," and "practice change." Data on the CCOE program were collected from "how-to manuals" provided by each Center; the CCOE program evaluation report; CCOE annual and quarterly reports from 2005-2007; and an initial CCOE program draft provided by OWH.

Results. Systems change has been addressed extensively in the literature. Common goals, barriers or challenges, and steps toward successful change were outlined based on the literature review and were compared with the CCOE experience. Supporting documents from the CCOEs were used to identify successful change efforts in the Centers and aspects that did or did not mirror best practices. The Centers often faced similar challenges to those documented in the literature and successfully resolved many of them. Overall, the CCOE program and the individual Centers appropriately and successfully applied many of the elements identified in the literature as crucial to successful systems change implementation.

Conclusion. The CCOE program can be considered a successful model of systems change in health care, although some of the Centers achieved greater successes in certain aspects of implementing best practices. As a whole, CCOEs appear to be a dynamic, flexible initiative that fulfilled their goal of improving care delivery to a target population of underserved women. The program has begun addressing issues of sustainability, and it may become a model for other programs if it can sustain these systems changes for the long term.

INTRODUCTION

The challenge of effectively incorporating change is one faced by many types of organizations, including health care systems. Health care systems are complex structures that require maintenance to provide appropriately delivered, equal-access care. Implementation of new programming or processes on any level—whether an entirely new system or a small change in an existing practice—typically involves high-level integrations, a team of numerous stakeholders, well-defined goals, and a model of change to address problems and their causes (Cohen, Tallia et al. 2005). Such changes are frequently referred to as systems changes. While an extensive literature exists elsewhere on how to incorporate systems change for other organizational structures, this review focuses on systems change related specifically to health care organizations.

Systems change, although broadly interpreted, can be defined as a sustainable effort to address health care concerns through policy changes. It entails the implementation of multiple activities; the support of numerous participants (including providers and allied health professional, a practice facilitator who helps to implement change, the affected patient population, and community partners); and financial and other resources (Robinson, Driedger et al. 2006). When implementing these policy changes, questions such as "Who has the capacity for change?"; "Who must participate in change implementation?"; and "What are participant views of change?" must be answered during program development for changes to be effective (Cohen, Jr. et al. 2004). Basing such activities on a change model helps to ensure that the appropriate expertise, resources, and guidelines are involved (Cohen, Tallia et al. 2005). Once change is achieved, sustaining implemented changes is a separate challenge with its own goals, barriers, and participants. The goal of long-term sustainability should be addressed during initial planning to ensure long-term viability and to reduce the costs associated with programs repeatedly starting and ending (Wagner, Austin et al. 2006).

Systems change initiatives are especially important for improving women's health care. Research has shown that "many women's health needs are inadequately addressed" (Agency for Healthcare Research and Quality 2004), and differences remain "between men and women in the receipt of evidence-based health care" (Correa-de-Araujo and Clancy 2006). On average women experience more chronic conditions than men, many of which require medical management. Likewise, "women have fewer resources in terms of time, money, and insurance coverage in their own names," which makes it harder for them to access the health care system, even though women are more likely than men to seek preventive care (Brittle and Bird 2007).

To improve care for women, the United States is seeing an increase in the number of women's health centers. These centers "appear to be meeting a need for a population of women seeking care in a more female-friendly setting" and are "particularly effective at providing preventive care for women" (Brittle and Bird 2007).

Such centers, as a group, are attempting to implement systems change to improve women's care. Two of the largest such examples of change initiatives for women are sponsored by the U.S. Department of Health and Human Services' (DHHS) Office on Women's Health (OWH). For more than a decade, the OWH has sponsored several national programs to encourage communities to create and sustain health care models designed to serve women. The most prominent of these are the National Centers of Excellence in Women's Health (CoEs) and the National Community Centers of Excellence in Women's Health (CCOEs). For the purposes of this report, we focus on the CCOEs as a national case study in implementing systems change to improve women's health.

The CCOE program was initiated in 2000 and embodies local-level, patient-oriented systems change in women's health care. The program includes 14 community-based organizations that aim to improve the health care provided to underserved women within their communities. The intention of CCOEs is to employ systems change efforts at a fairly high level, involving a wide array of changes in care processes and organizational approaches across a variety of conditions, to improve care for women. These Centers employ many aspects of successful systems change initiatives, including the involvement of local participants, identifying successful interventions that are patient and population-specific, and overcoming barriers. As successfully implemented, community-driven centers, CCOEs may serve as models of dynamic and useful interventions for other health care change initiatives.

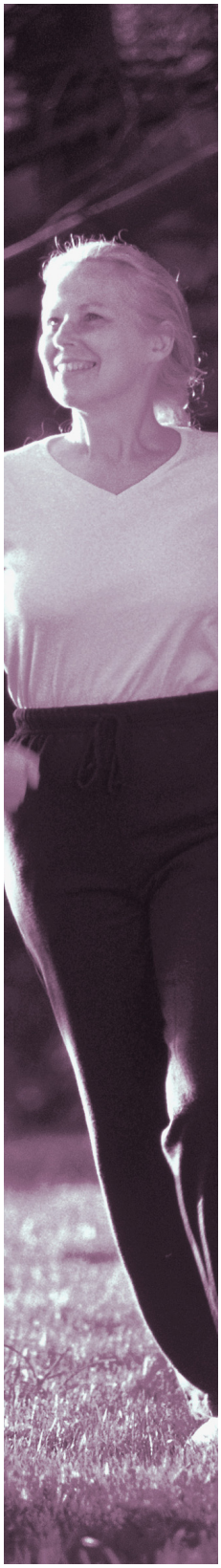
This report consists of two main sections. The first section comprises a detailed literature review outlining current best practices in health care systems change. The second part describes the CCOE program and documents how CCOEs have implemented systems change, including examples and lessons learned. The report concludes with an analysis of how CCOEs may serve as a model for other systems change initiatives, including other such initiatives in women's health.

METHODS

The literature search was conducted in June and July 2007 in databases that covered relevant health and medical subject matter. These included PubMed (MEDLINE) and the Cumulative Index to Nursing & Allied Health Literature (CINAHL) database for appropriate academic journal publications in medical, nursing, and allied health fields; MDConsult for medical books, clinics, and guidelines; the National Guideline Clearinghouse (NGC) for evidence-based medical practice guidelines; and Google Scholar for scholarly publications available on the Internet that may have been missed in the other database searches.

Searches were conducted electronically with a collection of primary and secondary keywords. Primary keywords searched individually were as follows: "systems change," "practice change," and "guidelines" in relation to health care change; and "healthcare," "health care," "women's health," and "preventive care" in relation to health. Secondary keywords, which then were combined with the primary search results, included "achieve," "model," "implement," "intervention," "resources," "practice," and "best practice." PubMed and CINAHL searches were limited to the past five years and to the English language; PubMed searches were focused further by limiting the searches to a combination of "evidence-based guideline," "meta-analysis," "review," "randomized controlled trial," or "controlled trial" article types. Bibliographies of retrieved literature were then scanned for additional relevant journal articles to include as primary sources. The combined searches retrieved more than 200 results, and a review of the titles and abstracts identified approximately 50 documents for possible inclusion in the literature review. Full texts were retrieved for these and were entered into an EndNote (bibliographic reference program) library. This library was used to generate the bibliography for this report.

For the second part of this report, we reviewed documents specific to the CCOE program. CCOE-specific documents were provided by OWH or were identified by Internet searches of the Womenshealth.gov Web site (http://www.womenshealth.gov/owh) for "CCOE" and for individual Center names. We reviewed these documents to summarize and report on the work undertaken by CCOEs related to systems change, including lessons learned and particularly successful interventions in select Centers. A primary data source for this effort was the how-to reports each Center submitted to OWH in 2003 describing lessons learned from their efforts to implement systems change (Office on Women's Health 2003). These reports were thoroughly reviewed and cataloged to determine which best practices were undertaken by each Center.[1] In addition, we reviewed the CCOEs' annual and quarterly progress reports to OWH from 2005-2007, as well as data collected by another contractor to evaluate the CCOE program and to identify CCOE best practices.



[1] Two CCOEs were established in 2004, after the how-to reports were submitted in 2003. These Centers were, therefore, included in less detail in this review.

LITERATURE REVIEW: BEST PRACTICES IN HEALTH CARE SYSTEMS CHANGE

Change within health care systems typically is advanced for the broad goal of improving care. More specifically, such initiatives are typically undertaken with three specific goals in mind:

- to increase quality of care for underserved populations by addressing cultural, literacy, socioeconomic, and access barriers (Miranda, Duan et al. 2003; Centers for Disease Control and Prevention 2007);
- to improve health outcomes and overall quality of care provided by increasing preventive services and by following evidence-based guidelines for care (Roski, Jeddeloh et al. 2003; Torrey, Finnerty et al. 2003); and
- to increase practice efficiency and decrease costs to providers and patients due to increased collaborations or referral programs (Mehta, Kushniruk et al. 1998; Jencks, Huff et al. 2003).

Specific change interventions may involve addressing existing inadequacies in a practice or patient population that may prevent the achievement of the above goals in any given health system (Kreger, Brindis et al. 2007). Such change interventions can be undertaken within a particular practice setting or settings or as a collaborative intervention where learning and insights are emphasized across numerous care settings (Mittman 2004). For this review, we focus on the former, as the inquiries OWH has received related to change improvement efforts tend to be site specific.[2] The review also encompasses, broadly, studies and best practices derived from the quality improvement literature as well as broader studies on systems change within health care systems.

Even where systems change goals are well-defined and enjoy strong internal support, change is not easily implemented, even on a small scale. Because achieving even one change goal may require myriad interventions and resources, numerous participants and leaders must be involved in the change framework for it to be successful (Torrey, Finnerty et al. 2003). Participation is best conceptualized as a team effort; team members must become stakeholders in the program and its outcome to ensure success. Providers, including physicians, staff, and allied professionals, all must take ownership of the interventions and collaborate with one another for success to occur (Cohen, Tallia et al. 2005; Cormack, Hillier et al. 2007; Sherman, Fotiades et al. 2007). In addition, the targeted patient group must be empowered and educated to best receive the intervention benefits (Cooper, Hill et al. 2002). Another crucial participant in the change process is the practice facilita-

[2] However, as we note in the CCOE section of this report, to the extent that such Centers did share information, such information sharing was perceived as helpful. This finding is broadly consistent with the literature on the effects of quality collaborative; this research is suggestive but not yet conclusive that such collaboratives represent a positive return on investment (Fremont, Joyce et al. 2006).

tor—whether present only for initial implementation or as a long-term team member—who oversees and coordinates much of a systems change process (Backer, Geske et al. 2005). Community partners are yet another set of participants. Such partners help to increase program visibility and to provide necessary resources and/or funding sources (Wagner, Austin et al. 2006; Centers for Disease Control and Prevention 2007). Such partners include community health organizations, including other care providers and established hospital or clinic systems; local businesses, including those not directly oriented to health care (e.g., police departments, YMCAs, or social service groups) that can provide referrals or affiliated care needs to the target group; community leaders or advocates who can increase program visibility and provide necessary resources and/or funding sources (Wagner, Austin et al. 2006; Centers for Disease Control and Prevention 2007); and potential funding sources (e.g., local or national government organizations; private donors), who help to sustain change programs (Wagner, Austin et al. 2006).

To be most successful, systems change initiatives should organize themselves in a structured fashion using a change model (Cohen, Tallia et al. 2005) and outline the steps required to implement a policy or procedure change. Successful systems change models in the literature describe necessary program participants, as well as individual program goals and barriers. In addition, these models often discuss long-term sustainability concerns and methods used to evaluate the success or failure of programs and interventions (Cooper, Hill et al. 2002). Successful models identify dynamic changes that address the cause of a deficiency (Centers for Disease Control and Prevention 2007), and most also include plans that can be generalized to new situations that arise as the health care system inevitably changes (Long, Larkins et al. 2001). The best models also include short- and long-term planning for successful change initiation and sustainability (Cooper, Hill et al. 2002; Cohen, Jr. et al. 2004).

Just as most systems change models share common goals and participants, so must they address common barriers to change and contend with routine planning inadequacies. Common barriers to implementation of change can be classified as follows:

- **Personal/professional:** Challenges to professionals who implement change include inertia and difficulty breaking established practices or existing habits; a lack of teamwork within a practice or a lack of incentives for the provider to implement a change; and poor leadership and ownership of the initiative (Scott, Mannion et al. 2003; Cohen, Jr. et al. 2004; Nuovo, Balsbaugh et al. 2004; Ruhe, Weyer et al. 2004; Backer, Geske et al. 2005; Cormack, Hillier et al. 2007).
- **Structural:** Physical barriers to implementing change include a poorly organized office setup with limited physician presence or a poor location that is not easily accessible to the targeted patient population. Inadequate program structures may also prevent ideal care by providing limited resources to patients and staff and by inadequately utilizing technical assets (Cooper, Hill et al. 2002; Roski, Jeddeloh et al. 2003; Foster-Fishman, Nowell et al. 2007; Redmond 2007).
- **Temporal:** Concerns about a lack of time to implement change can become a challenge at many levels of change implementation. An underestimation of the time required to implement changes and to achieve goals has been frequently noted as a primary barrier to success. In addition, limited time invested by participants and a lack of long-term planning challenge the success of systems change programs (McCarthy, Ulcickas Yood et al. 1997).
- **Educational:** Although implementation of evidence-based guidelines is often cited as a method to achieve improved quality of care, limited training time and limited provision or use of

continuing medical education resources may prevent the successful implementation of such guidelines (Nuovo, Balsbaugh et al. 2004; Beach, Gary et al. 2006; Foster-Fishman, Nowell et al. 2007). When the target patient group is not aware of or involved in the change effort that also contributes to failure of initiatives (Cooper, Hill et al. 2002).

- **Financial:** A lack of initial or long-term funding is one of the most common causes of systems change failure. Financial problems are especially likely to occur during the sustainability phase, after initial implementation has occurred (Kreger, Brindis et al. 2007).

Change models differ in how they address these and similar problems, but flexibility and openness to continuous change contribute to the successful resolution of these barriers. Our literature review documents several best practices to resolve such inadequacies related to planning for successful systems change; discusses some frequently successful and unsuccessful change interventions; and discusses tools for sustaining and evaluating change. Later, we discuss how the CCOEs, both individually and as a group, met and addressed such barriers.

PLANNING FOR SUCCESSFUL SYSTEMS CHANGE

Certain characteristics appear common to all successful health care systems change initiatives. These include motivation, flexibility, and collaboration. Participants must be motivated enough to change habits and to take ownership in the new program (Torrey, Finnerty et al. 2003; Ruhe, Weyer et al. 2004). Organization and participant buy-in are particularly important when the goal is to address disparities in care or to provide care to a new or different patient population. In successful programs, challenges are often viewed as motivators that increase involvement and interest (Backer, Geske et al. 2005). Partners, providers, and staff must be flexible during initial implementation and during continued re-evaluations. To achieve this, they must view the changes as long-term and must be adaptable, along with the tools and resources they design (Cohen, Tallia et al. 2005). Community collaboration established as early as possible in the change process also helps to create lasting bonds and to increase visibility, which helps to ensure the long-term existence of a program (Padgett, Bekemeier et al. 2005). By collaborating with community leaders to provide services such as literacy adaptation, domestic violence protection, or access to transportation, barriers related to cultural or socioeconomic factors may be resolved (McCarthy, Ulcickas Yood et al. 1997; Cooper, Hill et al. 2002; Wagner, Austin et al. 2006; Kreger, Brindis et al. 2007).

In addition to motivation, flexibility, and collaboration, the literature identifies the following key components as crucial components of initial planning to maximize the success of systems change initiatives:

- **Identify a practice facilitator:** Practice facilitators, commonly nurse practitioners, typically are not members of the practice itself[3] but instead are objective participants who provide resources for interventions (e.g., educational materials); oversee planning of interventions (e.g., attend and possibly conduct strategy meetings and help identify target groups and needs); and contribute to the ongoing adaptation of the interventions (e.g., by providing feedback to providers and staff). In addition, the practice facilitator is integral to the evaluation of the systems change initiative, because he or she collects data generated by intervention techniques and uses

[3] For this review, we focus on health care systems change best practices in a relatively small setting such as those of most CCOEs. The role of a practice facilitator in larger setting might be quite different; e.g., a large multispecialty clinic might employ an entire team of practice facilitators.

that data to objectively assess the success of individual interventions and the program itself. Providers tend to respond positively to the presence of a facilitator. The practice facilitator is commonly seen as a vital contributor to the success of a systems change initiative (Baskerville, Hogg et al. 2001; Backer, Geske et al. 2005).

- **Hold an initial strategy meeting among crucial participants and host periodic strategy sessions:** An early strategy meeting including the facilitator, the practice provider or director, and all staff participants helps to delineate short- and long-term goals and methods. Starting change efforts with such a meeting immediately instills a sense of teamwork and ownership to the provider and staff, as it involves them directly in decision making (McCarthy, Ulcickas Yood et al. 1997; Cooper, Hill et al. 2002). Initial meetings also set the standard for continued collaboration and reassessment during the initiative's progression.

- **Conduct an initial needs assessment to determine problems and target audiences:** A needs assessment enables providers and staff to identify what specific policies must be implemented to improve care or to resolve existing problems in the practice setting. This assessment should include decision making about the target patient population so that goals and interventions can be specifically directed to identified needs (Cooper, Hill et al. 2002; Centers for Disease Control and Prevention 2007). Further discussion of the target group should identify nonmedical factors that affect the population's ability to access the program and to benefit from the changes. These factors, described earlier as potential barriers to a systems change program's success, include cultural and literacy discrepancies between providers and patients (e.g., unequal care provision to minority groups or poor communication with non-English speakers) (Centers for Disease Control and Prevention 2007); physical access difficulties (e.g., related to wheelchair access); and socioeconomic impediments (e.g., lack of insurance) (McCarthy, Ulcickas Yood et al. 1997; Kreger, Brindis et al. 2007).

- **Identify all participants and establish roles:** Change that is dictated from administrators is rarely well-received by providers and staff members, and it is often poorly enacted and enforced (Watt, Sword et al. 2005). The identification of leadership roles increases the likelihood of staff involvement, satisfaction, and ownership of the new program. This in turn enhances the probability of initial and continued success of the intervention (Scott, Mannion et al. 2003; Backer, Geske et al. 2005). It is also important to establish clear roles for all external partners. Roles for partners should be addressed at the initial strategy meeting by identifying opportunities and need areas. Examples of successful advocacy and partnership includes: 1) local businesses and leaders may provide visibility to a systems change program through posters or word-of-mouth communications; 2) related health organizations, such as affiliated care services or local hospital groups, may collaborate to provide referrals or to become an umbrella source of funding or resources; and 3) outside organizations, such as police departments or social service organizations, may contribute services to the target group that empower group members or allow them to better access the systems change program (Backer, Geske et al. 2005; Wagner, Austin et al. 2006; Kreger, Brindis et al. 2007).

- **Identify needed patient resources and establish initial and long-term funding sources:** The implementation of new initiatives requires the resources to establish and to continue those efforts. Time (Cohen, Tallia et al. 2005), staffing presence (Cohen, Jr. et al. 2004; Backer, Geske et al. 2005), staffing skill level (Foster-Fishman, Nowell et al. 2007), and technology/technical

assistance (Roski, Jeddeloh et al. 2003) have been cited as examples of resources that must be provided for successful systems change initiatives. In addition, actual intervention tools, such as tracking databases or educational materials, must be obtained or designed. Initial funds to implement a systems change program are often limited, so additional sources of funding should be identified early on. Long-term program success is usually contingent on the ability of program participants to find continued funding sources, whether in the community (through public or private organizations) or from government entities. Collaboration to achieve such funding should not be delayed until the initiative is established. Rather, funding partners should be identified and actively recruited during the early planning stages (Padgett, Bekemeier et al. 2005; Kreger, Brindis et al. 2007).

- **Establish measurable goals, objectives, and interventions, and define evaluation strategies:** After the program's needs and participants are identified, interventions must be chosen to achieve the program's stated goals. Multiple strategies are often required to achieve the systems change goals (Torrey, Finnerty et al. 2003), and models that associate each intervention with a specific goal are most successful (Long, Larkins et al. 2001; Cooper, Hill et al. 2002). This association helps in two main ways: First, it enables each intervention to be measurable, ensuring that it can be analyzed for usefulness in goal achievement; second, it tends to make organizations focus on achieving a more limited number of target changes, thus reducing problems related to program participants being overwhelmed (Cooper, Hill et al. 2002; Torrey, Finnerty et al. 2003). Because systems change involves such a diverse group of participants, establishing measurable goals and evaluation strategies early on is essential to fostering accurate communication and agreement regarding the tasks at hand and to coordinating efforts to achieve objectives. Measurement methods for each intervention/goal outcome should be designed during the initial planning stages. Once these measures are in place, interventions and goals can then be assessed periodically during the program's duration (Long, Larkins et al. 2001). Decisions about how and when to elicit and collect feedback, and the design of a measurement system, should occur during the initial planning to enhance the likelihood of long-term program continuation (Wagner, Austin et al. 2006; Centers for Disease Control and Prevention 2007).

SUCCESSFUL INTERVENTIONS THAT HAVE BEEN IDENTIFIED IN THE LITERATURE

In addition to the importance of planning and teamwork to implement successful interventions, other factors were identified in the literature as frequently related to successful (or unsuccessful) interventions. Successful interventions address patients' cultural and socioeconomic issues; increase resources related to professional education and enablement; and enhance the structural integration of individual interventions.

Table 1 lists the interventions most commonly identified in published systems change models as successful. Of these, the interventions most often noted as critical to successful change implementation include reminder systems, chart audits, and care feedback, especially when provided or performed by a practice facilitator (these items are marked with an asterisk in Table 1). Many of these key interventions are conducted by the practice facilitator. These facilitator-based interventions, conducted on a structured, scheduled basis (e.g., two-hour visits occurring twice monthly), provide systems change programs with regular feedback. In one example described by Ruhe et al (2004), the providers greatly

TABLE 1

Successful Systems Change Interventions Identified in Published Change Models

INTERVENTION	LITERATURE MODELS	EXAMPLE/EXPLANATION
Tracking system	Baskerville, Hogg et al. 2001; Beach, Gary et al. 2006	Excellent success in providing appropriate care such as tobacco cessation counseling or preventive care to targeted minority populations.
Reminder system about patient evaluations*	Backer, Geske et al. 2005; Beach, Gary et al. 2006	Examples include databases implemented to generate monthly reminder lists that tell providers which patients need preventive screenings such as mammography.
Chart auditing*	Baskerville, Hogg et al. 2001; Long, Larkins et al. 2001; Backer, Geske et al. 2005	Documentation of practice changes in patient charts, when collected during regular chart audits, provides feedback to staff to report successes and to enhance the likelihood of practice change continuation.
Provision-of-care feedback*	Baskerville, Hogg et al. 2001; Torrey, Finnerty et al. 2003	Feedback to providers on established practices has been shown to improve measurable actions such as prescribing or test ordering.
Interactive continuing medical education/toolkits	Long, Larkins et al. 2001; Torrey, Finnerty et al. 2003; Cormack, Hillier et al. 2007	Skill practice sessions and discussion groups improve provider knowledge and increase the application of skills in a practice setting; team member education sessions increase staff communication and accountability.
Patient education resources/lay education	Torrey, Finnerty et al. 2003; Backer, Geske et al. 2005	Patient awareness of care benefits (e.g., mammography screenings) is increased with the provision of patient education materials.
Self-assessment surveys	Emshoff, Darnell et al. 2007	Annual survey completion by practice team members increases reflection, evaluation, and program visibility.
Cultural/literacy barrier adaptations	Cooper, Hill et al. 2002; Miranda, Duan et al. 2003; Centers for Disease Control and Prevention 2007	Such adaptations address health initiatives in cultural contexts and focus on ethnicity-specific needs; providing clinic translation services has improved the care provided to cultural minority patients.
Community programs for health	Emshoff, Darnell et al. 2007	Coalitions to provide services in the community that will increase access to care support the success of systems change efforts and are becoming more prevalent.

* Interventions most often noted as critical in the literature.

relied on the facilitator's presence to continue the initiative of change programs. Baskerville et al. (2001) also note that 90 percent of providers in their study were willing to continue to have a nurse facilitator in their office to improve care delivery. These findings speak to the importance of facilitators in successful change initiatives.

BEST PRACTICE EXAMPLE

An illustrative example of using the preceding best practices to plan for successful systems change was reported by Sherman et al. (2007). The example concerns the TIDES (Translating Initiatives for Depression into Effective Solutions) program, an approach to improve the treatment of depression by addressing provider gaps in knowledge and experience through the implementation of a collaborative care approach.

The TIDES program was established within the Veterans Health Administration as a seven-site intervention to effect systems change (with three additional control sites). A model for interacting with and evaluating patients with depression was provided to each site. Education was identified as a critical need for successful collaborative care; the TIDES program focused on educating participating health professionals at each site by determining provider education needs; developing educational materials based on the needs assessment; designing site-specific interventions; implementing those interventions; and measuring their effectiveness.

In this collaborative care setting, providers screened patients for depression and referred patients to a depression care manager (who fulfilled the role of change facilitator by overseeing the treatment plan for targeted patients and by becoming the communication bridge between providers and patients and between primary care providers and mental health facilities). During the education-delivery portion of the TIDES program, VA-based educational materials were locally tailored and implemented, and individual site staff members were involved in the decision-making steps.

The largest challenge identified by the program was time. Even providers who were receptive to educational interventions lacked the time to participate fully and to become more involved in their planning. As a result, implementation of educational tools was only moderately successful. However, the implementation of a collaborative care model improved patient care at each site. Nearly all primary care providers referred patients with depressive symptoms to a depression care manager, allowing the patients to receive appropriate depression care. Thus, the TIDES program is a best practices model for designing and implementing a site-specific collaborative care framework within a larger network (i.e., the Veterans Health Administration) (Sherman, Fotiades et al. 2007).

UNSUCCESSFUL SYSTEMS CHANGE INTERVENTIONS OUTLINED IN THE LITERATURE

Studies indicate that some interventions, though potentially useful, were not favored by providers when applied to actual systems change experiences. In addition, some interventions have been underutilized, so that increased equity of care or improved health outcomes have not yet been associated with these interventions. In addition, and in contrast to the successful interventions described in Table 1 and in the "Planning for Successful Systems Change" section, a handful of systems change interventions identified in the literature appear to be ineffective in achieving the desired goals. Table 2 lists examples of these nonpreferred, underutilized, or ineffective interventions.

TABLE 2

Unsuccessful Systems Change Interventions Identified in Published Change Models

INTERVENTION	RATING	LITERATURE MODELS	EXAMPLE/EXPLANATION
Financial incentives	Questionable overall effectiveness	Roski, Jeddeloh et al. 2003	Provider payouts for achieving performance targets of questionable effectiveness.
Patient health posters	Considered ineffective	Baskerville, Hogg et al. 2001	Considered not useful to outcomes.
Passive continuing medical education	Ineffective/ under-implemented	Torrey, Finnerty et al. 2003; Beach, Gary et al. 2006	Didactic lessons; dissemination of educational documents such as current evidence-based guidelines without additional training or interaction.
Direct-to-patient services	Underutilized	Beach, Gary et al. 2006	Physician-bypassed preventive services by nurses or nurse practitioners may improve care but has not been used enough to determine effectiveness.
Remote translation services	Underutilized	Beach, Gary et al. 2006	Potentially useful to overcome provider-patient communication barriers, but poorly supported by examples.
Information technology	Underutilized	Roski, Jeddeloh et al. 2003	Potentially useful, but poor use of technology tracking may cause patients who require interventions to be missed.
Cultural training	Unevaluated	Beach, Price et al. 2005	Improved professional attitudes and skills observed in many studies, but no data to support reduced costs or improved health.
Patient education binders	Nonpreferred	Baskerville, Hogg et al. 2001	Providers consider binders of patient information too bulky and tedious to be useful.

SUSTAINING SYSTEMS CHANGE INITIATIVES

Sustainability of a health care systems change is a separate challenge from the initiation of such a program. Whereas a common goal of systems change initiatives is to improve an outcome by implementing a policy change, a primary goal of sustaining systems change is to continue the established policy or program beyond the initial funding period (Padgett, Bekemeier et al. 2005; Padgett, Kinabrew et al. 2005).

Systems change initiatives are often planned with funding and resources for a prescribed amount of time. When these resources end, new challenges arise (Padgett, Bekemeier et al. 2005), even for cost-effective interventions that have demonstrated an attractive return on investment. A systems change program succeeds most often when the participants prepare for long-term sustainability, including funding, during the initial pilot period. Adaptability; a long-term focus and mentality; and a flexible, forward-thinking strategy are key (Padgett, Kinabrew et al. 2005; Kreger, Brindis et al. 2007).

Anticipating the varied challenges to sustaining a new program contributes greatly to the likelihood of its successful continuation. Challenges may be mental or organizational, or they may result from changes to initial resources or plans. Any or all of these complex challenges should be addressed at the initial strategy meeting and during the initial planning stages (Padgett, Kinabrew et al. 2005). Common challenges include the following:

- **Unhelpful health professional mentalities:** Provider and staff views of an intervention as finite or short-term, instead of as a permanent improvement to the practice, directly inhibit sustainability (Ruhe, Weyer et al. 2004; Cohen, Tallia et al. 2005). Additionally, because systems change levels off with time (Emshoff, Darnell et al. 2007), continued staff motivation by leaders and ownership by all team members are necessary to maintain the program (Wagner, Austin et al. 2006; Cormack, Hillier et al. 2007). Implementation without direct involvement from a high-level administrator or without staff input is generally poorly enforced. Staff members are unlikely to continue such interventions beyond, or even during, initial funding and planning, and consistency becomes difficult (Ruhe, Weyer et al. 2004; Watt, Sword et al. 2005). Thus, continued collaboration and communication are crucial to successful sustainability.

- **Lack of leadership:** A lack of organization, leadership, or long-term planning contributes to the abrupt end of many initiatives (Backer, Geske et al. 2005; Cohen, Tallia et al. 2005). When too much of the continuing process is left to interpretation, even successful programs may fail (Watt, Sword et al. 2005). As noted, systems change appears to level off with time and to become static, outdated, or habitual (Emshoff, Darnell et al. 2007). Advance planning to adapt to these challenges helps to ensure sustainability.

- **Loss of facilitator, community support, or core staff members:** The loss of a crucial component of the initial program is a major reason for systems change failure. The loss of a program's facilitator, who is typically crucial to the change implementation, may cause the practice participants to revert to old habits until the implemented changes cease to exist (Backer, Geske et al. 2005). Loss of community support, resulting in decreased visibility and target group awareness, also contributes to failed sustainability (Wagner, Austin et al. 2006). Likewise, loss of core staff members who participated in the initial practice change model reduces the likelihood of long-term sustainability (Fremont, Joyce et al. 2006; Robinson, Driedger et al. 2006; Cormack, Hillier et al. 2007).

- **Loss of funding:** The biggest driver of systems change failure is loss of the primary funding source. Systems change initiatives at any level typically require large start-up costs (Padgett, Kinabrew et al. 2005). For this reason alone, programs must establish long-term plans for the continuation of funding and avoid starting again from the beginning whenever possible (Backer, Geske et al. 2005; Padgett, Kinabrew et al. 2005).

Methods to successfully sustain change directly address the common challenges listed above. General methods include the acceptance of practice and intervention complexities; a proactive approach to organization; and frequent, realistic, team-based discussions of the problems that inevitably arise in a dynamic system (Ruhe, Weyer et al. 2004; Backer, Geske et al. 2005; Robinson, Driedger et al. 2006).

In addition, specific methods have been identified as important to the continuation of systems change models. These include:

- continued motivation by leaders that may ease the burden of change on the participants, motivate the staff, and increase continued ownership of the program (Wagner, Austin et al. 2006);
- continued openness among staff and stakeholders about developing new ideas and creating a dynamic model and plan (Ruhe, Weyer et al. 2004); and
- tailoring any program to changing needs over time (Cohen, Tallia et al. 2005).

More specifically, periodic strategy meetings are important to enable staff members to develop their own dynamic, comprehensive interventions. Specific community-building initiatives contribute to increased visibility and support by community leaders and to strategy-sharing among communities and programs. The continued involvement of stakeholders at all levels is essential (Cohen, Jr. et al. 2004; Cohen, Tallia et al. 2005).

Finally, sustaining a successful systems change program requires a continued source of funding. When initial funding of a pilot program ends, the program must adapt to new funding sources in any of the following ways (Padgett, Bekemeier et al. 2005; Redmond 2007):

- Funds can be shifted within an organization (with the approval of high-level administrators) to continue to support an intervention that is cost-effective or has otherwise demonstrated benefits.
- Institutionalization, by becoming a part of a local, state, or national government organization, provides reliable funding but may be politically guided or limited.
- Entering into nonprofit status may establish a regular source of funding. The program may become its own nonprofit organization, or it may become a subsidiary of an existing health care nonprofit (e.g., a nonprofit hospital system in the community) to ensure a source of funding.
- Actively applying for short-term sources of funds, such as sponsored grant programs, can be associated with the program's health care outcomes and can provide a basis for funded research of the interventions.
- Seeking partnerships in the community can result in a stream of private funding. For this model to be successful, programs need to increase visibility and communication between stakeholders and community businesses and leaders to foster alliances and to obtain donor funds.

As a more detailed example, Padgett et al. (2005) provide a summary of how to obtain continued support of an initiative and how to sustain a successful program. The authors evaluated 18 Turning Point practice models to identify continued funding possibilities to enable the continuation of previously funded health initiatives. Political allies and champions, communication with multiple collaborators, and improved visibility were identified as especially useful. The authors advocate the transformation of grant-funded pilot programs into fully funded organizations with continued streams of funding. Approaches identified as successful included "strategic planning to institutionalize efforts with government," analysis of the benefits of private institutionalization, and strong community outreach to promote partnerships, increase visibility, and develop "strategic alliances across multiple sectors."

EVALUATING INTERVENTIONS

Evaluation of implemented changes allows for the comparison of systems change practices and the identification of critical success factors. Evaluation also contributes to participants' ability to maintain and improve upon implementation, and ensures repeatability of interventions for specific, continued improvement (Long, Larkins et al. 2001; Wagner, Austin et al. 2006). Additionally, reporting successes enables programs to serve as a model for others (Cohen, Tallia et al. 2005).

When developing an evaluation system, programs must decide what items should be measured and what tools are required for measurement. Early planning is needed to bring potential long-term funders into the process so that their interests and concerns can be directly addressed. Short-term and intermediate/long-term measures of change implementation should be evaluated to assess the ongoing effectiveness of an initiative. Possible short-term measures include evaluations of program accomplishments, functions, and end-point changes (e.g., increased knowledge by the staff or increased implementation of tracking procedures). Intermediate/long-term measurements document longer-term goals. For example, small changes in laboratory values of specific disease states may be analyzed to reflect long-term morbidity rates (Kreger, Brindis et al. 2007).

Success indicators may be classified as social improvements (e.g., improved patient experiences or improved provider collaboration); health and health care improvements (e.g., improved disease or screening outcomes); or financial/resource improvements (e.g., increased efficiency and decreased costs to the practice or to the patient). Metrics and tools that have been implemented to evaluate systems change initiatives include the following:

- Process improvements that directly reflect the success of an intervention (Wagner, Austin et al. 2006).
- Evaluations of funding, collaboration, and health care decision making (Emshoff, Darnell et al. 2007).
- Decreased costs and increased practice efficiency due to increased provider collaboration or referrals (Smith, Des Jardins et al. 2000).
- Return on investment analyses (ROI) to evaluate the financial impact of change programs or efforts (Goetzel, Ozminkowski et al. 2005). However, it is worth noting that few formal cost analyses have yet been conducted related to systems change initiatives (Beach, Gary et al. 2006).
- Increased patient return rates that reflect improved access to care (Redmond 2007).

- Improved health outcomes (e.g., improved HbA1C levels in diabetic patients), increased preventive care screening rates, or decreased rates of disease in the target population that reflect an increased application of quality care, effective implementation of evidence-based guidelines, or an overall increase in health professional education (Oehlmann and Martin 2002; Keller, Fiore et al. 2005; Saaddine, Cadwell et al. 2006).
- Technological evaluation tools such as electronic databases, although such databases require extensive implementation and maintenance. For example, an electronic medical record system reports on the total number of patients in a practice who receive a specific intervention (e.g., the number of patients who are enrolled in a smoking prevention program) or who achieve a specific intervention goal (e.g., the number of patients whose cholesterol levels decline to normal), and may provide reports on patient follow-up (e.g., the return rates of one socioeconomic subset of patients). A system-specific electronic tracking system may also be developed to evaluate an intervention; for example, a database tool may measure the number of times a laboratory test was ordered by any practitioner (Roski, Jeddeloh et al. 2003; Grant, Buse et al. 2005; Saaddine, Cadwell et al. 2006).
- Data collected by practice facilitators, including (Baskerville, Hogg et al. 2001; Backer, Geske et al. 2005; Keller, Fiore et al. 2005):
    - patient and provider surveys, which qualitatively document the effects of a change initiative (e.g., how often patients take advantage of education or outreach attempts, or provider perceptions about continuing medical education provision);
    - project diaries, which are recorded regularly by staff participants to document interventions performed (e.g., the number of referrals); and
    - chart reviews or audits, which document the number of patients receiving a given intervention; such reviews can be compared with pre-systems change rates (e.g., the number of breast cancer screenings conducted before and after a chart sticker system was implemented).

Once a tool has been selected, reporting methods must be chosen and applied. Multiple methods may be needed to address the primary needs and concerns of different stakeholders and can provide insight into what is working and why. For example, an effective intervention may achieve many but not all of the types of benefits described in this section, so selecting only one measure may inadvertently undermine a largely successful change.

Because qualitative analysis is relatively easy to implement, it is the first and most commonly used reporting method in literature models of systems change. However, some change initiatives do employ quantitative methods. Quantitative analysis may be obtained by comparing measurements of outcomes against pre-change levels or against non-change practices. Statistical analyses of these comparisons may increase support for an intervention's efficacy (Kreger, Brindis et al. 2007). In addition, logic models that connect interventions with specific outcomes provide quantitative measurements, as well as specific data on each individual action in a complex, multilayered change initiative (Baskerville, Hogg et al. 2001). An ideal evaluation strategy might involve facilitator documentation over continued site visits, combined with technological databases. These measurements provide an objective source of data that can be qualitatively or quantitatively analyzed.

THE CCOE EXPERIENCE AS A MODEL OF SYSTEMS CHANGE

The National Community Centers of Excellence in Women's Health (CCOE) program was started in September 2000 by the U.S. Department of Health and Human Services' (DHHS) Office on Women's Health (OWH), and its partners the DHHS Office of Minority Health and the Health Resources and Services Administration's Office of Minority and Special Populations. The CCOE program was developed to encourage the integration and collaboration of existing health care services within a community setting. The overall goal of the program is to deliver comprehensive, integrated, multidisciplinary health services to women, particularly to underserved women, thus reducing fragmentation of women's health services. Each Center is a nucleus in its community for this innovative model of care, as it coordinates and strengthens programs by using community resources to their fullest (Office on Women's Health 2004).

To support the overarching development of each individual Center, OWH developed eight program goals and six core components to support these goals. These CCOE goals and components broadly mirror many goals identified in our review of systems change best practices (e.g., community outreach, lay education/empowerment, equity of care, professional training, and increased efficiency) (Office on Women's Health 2004). We show how these CCOE goals and components mirror systems change best practices in Table 3.

To fulfill the comprehensive, integrated, multidisciplinary approach to care required by OWH, the CCOEs had to: 1) assess the needs of the women in their communities; 2) identify the services the women said they needed that the CCOE did not provide; and 3) partner with other organizations to provide these services. None of the CCOEs offer all of the services needed by the women in their community under one roof or within one complex. As a result, the CCOEs developed "centers without walls" models of care that rely upon a strong, convenient, and responsive referral network of partners dedicated to the improvement of women's health. Case managers and community health workers—also referred to as lay health workers, promotoras, health advocates, ambassadors, peer health educators, community health aides, health intermediaries, doulas, nurse midwives, or indigenous health workers—are employed by the CCOEs to help the women navigate the system.

The program exists in a wide variety of geographic, cultural, and socioeconomic settings. Further description of each Center's specific target population may be found in Appendix A, which is based on a table in the National Community Centers of Excellence in Women's Health: Program Evaluation Executive Summary (Office on Women's Health 2004). While the settings are diverse, the women served by CCOEs share certain characteristics. They have disproportionately high rates of diabetes, hypertension, heart disease, HIV/AIDS, and other

TABLE 3

Goals and Components† as They Relate to Literature Models

CCOE PROGRAM GOAL	CCOE CORE COMPONENT*	SYSTEMS CHANGE MODEL GOAL
Reduce fragmentation of services and access barriers that women encounter, integrate comprehensive health services with other key components	Integrated care delivery	Increased care efficiency and decreased fragmentation of care
Create healthier communities	Integrated care delivery; technical assistance/model replication; public education and outreach	Increased quality of care
Empower underserved women as health care consumers and decision makers	Training; leadership development for women as consumers/providers	Patient empowerment and involvement in health
Increase women's health knowledge base using community-based research	Community-based research	Lay education and outreach
Increase the number of health professionals trained to work with underserved communities and increase their leadership and advocacy skills	Training; leadership development for women as consumers/providers; public education and outreach	Increased health professional training and increased application of evidence-based guidelines
Increase the number of young women who pursue health careers and increase leadership skills for women in the community	Training; leadership development for women as consumers/providers; public education and outreach	Community outreach/ leadership development
Spread success, through technical assistance, of model women's health program strategies	Technical assistance/model replication; public education and outreach	Repeatability/serving as a model program for others
Eliminate health disparities for underserved women	Integrated care delivery; training; public education and outreach	Eliminated disparities of care

† All six core components were associated with the eight program goals.
* Program core components may be directly associated with multiple program goals. A sample of these associations is provided, and more detail is available in the National Community Centers of Excellence in Women's Health: Program Evaluation Executive Summary (Office on Women's Health 2004).

chronic illnesses. Many are depressed and have been subjected to violence in the home. For some, their lack of education, economic security, and English language proficiency makes it difficult to access health services. Consequently, these women are more likely to delay seeking needed health services, less likely to follow doctors' recommendations, and less likely to receive optimal care.

Each Center is structured to best respond to local health needs, resources, and demographic/geographic concerns, with the assistance of local community partners. Thus, while the Centers are designed to achieve common goals, each Center faces its own challenges and barriers to implementing change.

The CCOEs have been remarkably successful at implementing such change efforts in diverse settings, in a short period of time (fewer than five years in most cases), and with limited resources (OWH funded has averaged $150,000 per Center per year). An independent evaluation of the 12 CCOEs in existence in 2004 found that the Centers have met or exceeded the requirements for all six OWH core components (Office on Women's Health 2004). Thus, the Centers represent an interesting national case study for how to effectively implement systems change efforts. While not all Centers succeeded equally on all goals, they collectively provide a sample of best practices and lessons learned with a broad, national application.

This section of the report evaluates how the Centers applied systems change best practices to achieve overarching CCOE goals within a specific community setting (Office on Women's Health 2004). The experiences of these Centers might serve as a model for others interested in initiating health care systems change to improve the care delivered to underserved women.

The 14 CCOEs are:

- Christiana Care Health System (DE)
- Greeley County Health Services (KS)
- Griffin Hospital (CT)
- Hennepin County Department of Primary Care/North Point Health and Wellness Center (MN)
- Jefferson Health System (AL)
- Kokua Kalihi Valley Comprehensive Family Services (HI)
- Mariposa Community Health Center (AZ)
- Morton Plant Hospital/Turley Family Health Center (FL)
- Northeast Missouri Health Council, Inc. (MO)
- NorthEast Ohio Neighborhood Health Services, Inc. (OH)
- Northeastern Vermont Area Health Education Center (VT)
- Oakhurst Medical Centers, Inc. (GA)
- St. Barnabas Hospital and Healthcare System (NY)
- Women's Health Services (NM)

PLANNING FOR SYSTEMS CHANGE

As noted in the literature review, planning is a large component of successful systems change initiatives. Part of the success of the CCOEs in implementing such changes is that each Center was required

to do extensive planning to apply for and implement the program as a condition of receiving OWH funding.

Here, we discuss the key factors identified in the literature review as crucial to planning for successful change, and how the CCOEs (as a group) addressed these issues:

- **Motivation:** All the Centers were sufficiently motivated to implement change efforts that they applied for a competitive Federal grant program. This initial level of motivation and commitment helped the Centers to succeed, ultimately, in realizing change goals.
- **Flexibility:** While the CCOE program required each Center to implement certain core components, it did allow each Center the ability to tailor the program to its community. The result was "innovation within each of the different locations. For example, St. Barnabas Hospital and Healthcare System (NY) has broadened the objectives and designation of the women in the target population and is currently developing programming to incorporate the model for all of its patients" (Ettinger 2007).
- **Collaboration:** Collaboration is a key component of the CCOE model, and all Centers were required to include partners in their initial planning efforts. Indeed, one of the primary benefits of the CCOE designation was an increased ability to bring together, under one umbrella, many of the organizations that provide services to women. This resulted in improved efficiency, reduced duplication of services, and improved compliance with recommendations for care and follow-up. In a 2004 evaluation of the Centers then in existence, CCOEs identified four key factors in their successes in working with partners (Office on Women's Health 2004). These included: 1) early development of relationships with partner organizations, which provide the partner with a sense of ownership and establish an early, common understanding of goals; 2) formalization of partnerships "on paper," which clearly defines the partners' and Centers' relationships and commitments; 3) frequent partner/CCOE communication, which ensures a continual connection between the Center and its partners and prevents misunderstandings of goals; and most importantly, 4) a common commitment, with common objectives, of the CCOE and partner organizations to the community and target group, which ensures working compatibility and increased efficiency of services to the community.
- **Identify a practice facilitator:** Each CCOE was required to have a program coordinator who was responsible for the daily administration of the CCOE program and served as a practice facilitator.
- **Hold an initial strategy meeting among crucial participants and host periodic strategy sessions:** Each Center worked initially and on an ongoing basis with key participants to discuss strategy.
- **Conduct an initial needs assessment to determine problems and target audiences:** Each Center engaged in this activity as part of the process of applying for an initial grant.
- **Identify all participants and establish roles:** Proper and well-defined staffing (including both paid staff and partner staff) is crucial to the success of change efforts. CCOEs identified three main staff roles as most critical to the success of each Center: the CCOE Center director (who used his/her leadership skills to market the program internally and externally); the CCOE

program coordinator (who acted as practice facilitator); and the community health worker (who connected patients and staff) (Office on Women's Health 2004). CCOEs especially emphasized the importance of early buy-in among all participants for change efforts. For example, Women's Health Services (NM) "invested the time and resources to gain buy-in from staff, and their board, who fully support the model," and reported that this early buy-in was a key component of success (Ettinger 2007). Mariposa Community Health Center (AZ) created special staff positions to ensure that its model was fully integrated, including a "Continuing Care Registry Coordinator position as well as the Director of Chronic Disease and Quality Assurance Position" (Office on Women's Health 2005-2007). The creation of these staff positions helped to institutionalize each Center's approach to providing this integrated care.

- **Identify needed patient resources and establish initial and long-term funding sources:** Centers identified patient resources as part of their initial planning efforts and early discussions with partners. Centers also did some initial planning for funding. As a group, the Centers did not do extensive long-term planning related to funding, and many are now dealing with struggles related to how to continue in the period after the OWH funds end. (These issues are discussed in more detail in the Sustaining Change Efforts section of this report.)
- **Establish measurable goals, objectives, and interventions, and define evaluation strategies:** CCOEs were required by OWH to achieve certain goals and objectives, and OWH formalized this process by requiring quarterly and annual reports on specific outcomes. Thus, the CCOEs all operated around well-defined goals. However, some Centers took a more comprehensive approach than others. For example, Women's Health Services (NM) used a very systematic approach focused around the Healthy People 2010 goal of reduced health disparities. Its leaders structured their entire organization around goals, objectives, determinants of health, and the health status of the target population (Office on Women's Health 2005-2007). A visual depiction of this integration is shown as **Figure 1**.

SUCCESSFUL SYSTEMS CHANGE INTERVENTIONS

In addition to initial planning to facilitate change efforts, the literature review identified nine specific approaches to implementing change efforts that have been shown to be successful. Most of the CCOEs attempted or fulfilled all of these interventions to support success, but some Centers were more successful than others at providing or utilizing these initiatives. Centers also differed greatly on the amount of technology used to achieve goals and on the goals or components they focused on.

Here, we highlight some especially successful methods of accomplishing each of these nine interventions by individual Centers. Our intent is to highlight specific examples of best practices, not to suggest that all Centers were equally successful in achieving all of these interventions:

- **Tracking system:** Tracking systems have been shown to increase the provision of appropriate care to targeted groups (Baskerville, Hogg et al. 2001). All CCOEs were required to develop intake forms to track services used, scheduled, and provided, and many also provided patient resources to help women track these services. Most Centers used chart tracking, flow sheets, or other paper systems to document initiatives; poor funding/support was a barrier to implementing technical databases. However, several Centers successfully introduced electronic databases. Jefferson Health System (AL) used an existing computer database and imple-

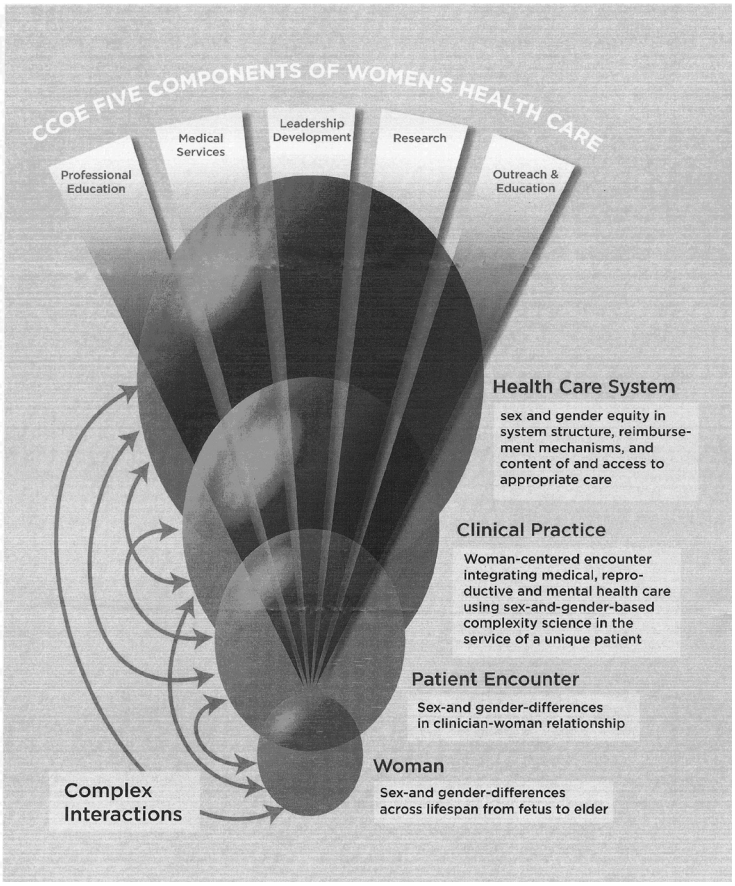


FIGURE 1

Women's Health Services (NM)

mented dummy codes that represented the different initiatives implemented (e.g., screening for a specific disease state), as well as which women attended the Center (Office on Women's Health 2005-2007). Hennepin County Department of Primary Care/North Point Health and Wellness Center (MN) interfaced a new database with its existing medical records systems to thoroughly track all interventions used to achieve program goals (Office on Women's Health 2003). Morton Plant Hospital/Turley Family Health Center (FL) added new codes to its medical records system to track CCOE patient encounters (Office on Women's Health 2005-2007). In addition, Greeley County Health Services (KS) modified the accounts receivable system to "identify CCOE patients at registration" and to track patient education, prescription assistance, pharmaceutical aid, well-woman visits, and follow-ups (Office on Women's Health 2005-2007).

- **Reminder system for patient evaluations:** Reminder systems have been shown to increase preventive and routine care (Backer, Geske et al. 2005). Several CCOEs successfully employed such systems. For example, Mariposa Community Health Center (AZ) has information systems that support disparity reduction goals, including provider and patient reminders, identification of patient populations in need of proactive care, and individual patient care planning to empower women to meet health goals (Office on Women's Health 2005-2007). Additionally, Greeley

County Health Services (KS) has an electronic database that tracks follow-ups such as "[P]ap smears, mammograms, blood pressure check[s] and other preventive recommendation" and sends mail or electronic reminders about those services as needed (Office on Women's Health 2005-2007).

- **Chart auditing:** Documenting practice changes in charts, and then routinely assessing such changes, helps to improve care (Baskerville, Hogg et al. 2001; Long, Larkins et al. 2001; Backer, Geske et al. 2005). Several CCOEs engaged in such chart audits. For example, the Kokua Kalihi Valley Comprehensive Family Services (HI) conducted an audit of 80 charts to serve as a baseline for various program indicators and then periodically evaluates charts to determine how the Center is performing compared to this baseline (Office on Women's Health 2003).

- **Provision-of-care feedback:** Offering regular feedback to providers on effective practices has been shown to improve care (Baskerville, Hogg et al. 2001; Torrey, Finnerty et al. 2003). Literature examples of this feedback typically describe facilitator evaluation and provider feedback about particular interventions, such as the number of laboratory tests ordered. Although the CCOEs provided such interventions (e.g., mammography screenings) and established tracking systems, the provision-of-care feedback for CCOEs focused more directly on facilitator-based administration of the Centers' integration efforts.

- **Interactive continuing medical education/toolkits:** Continuing education efforts improve staff education and allow for providers to practice skills (Long, Larkins et al. 2001; Torrey, Finnerty et al. 2003; Cormack, Hillier et al. 2007). OWH's education goal was aimed at encouraging the education of the lay public to become involved in health care rather than at implementing continuing medical education (CME) services to existing professional team members. Still, many Centers provided CME opportunities to providers and staff. Several examples of such innovative efforts follow:

    - Mariposa Community Health Center (AZ) developed a pilot training program for promotoras, in conjunction with the local university, to enhance leadership skills. Training was interactive and well-received by the women. The Center also offers ongoing workshops on motivational training to empower promotoras (Office on Women's Health 2005-2007).

    - Women's Health Services (NM) implemented a monthly journal club, in which "physicians, residents, and other providers gather to review and critique the latest medical journal articles through the lens of sex and gender specific medicine" (Office on Women's Health 2005-2007).

    - Christiana Care Health System (DE) utilized other OWH resources by inviting speakers from OWH's Centers of Excellence (CoE) to provide technical assistance in the form of grand rounds on cultural competency and transforming health institutions. The Center also developed special activities and incentives to educate its female employees about wellness issues, including special employee health days. A flyer from such a workshop is provided as Figure 2 (Office on Women's Health 2005-2007).

    - Hennepin County Department of Primary Care/North Point Health and Wellness Center (MN) provided monthly CME conferences for professional staff in order to

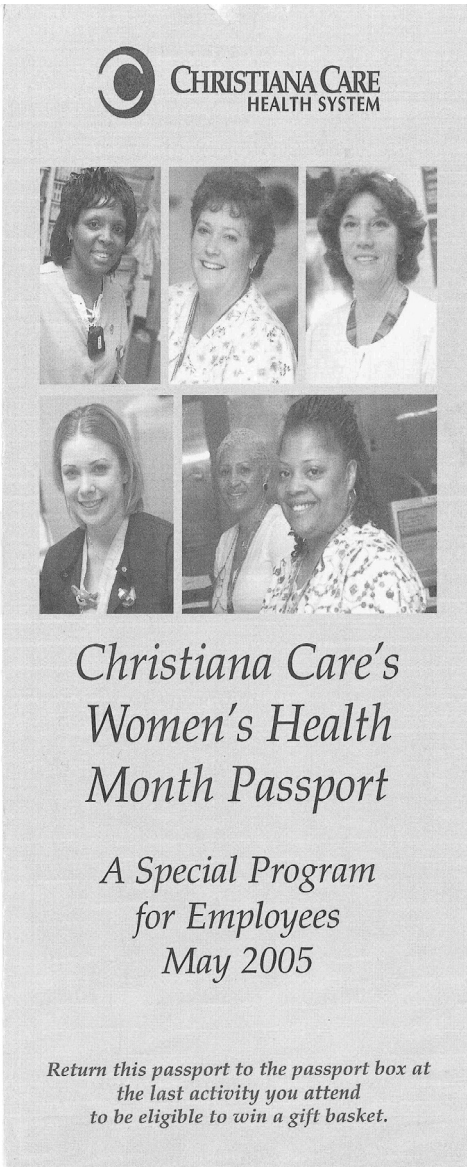


FIGURE 2

Christiana Care Health System (DE)

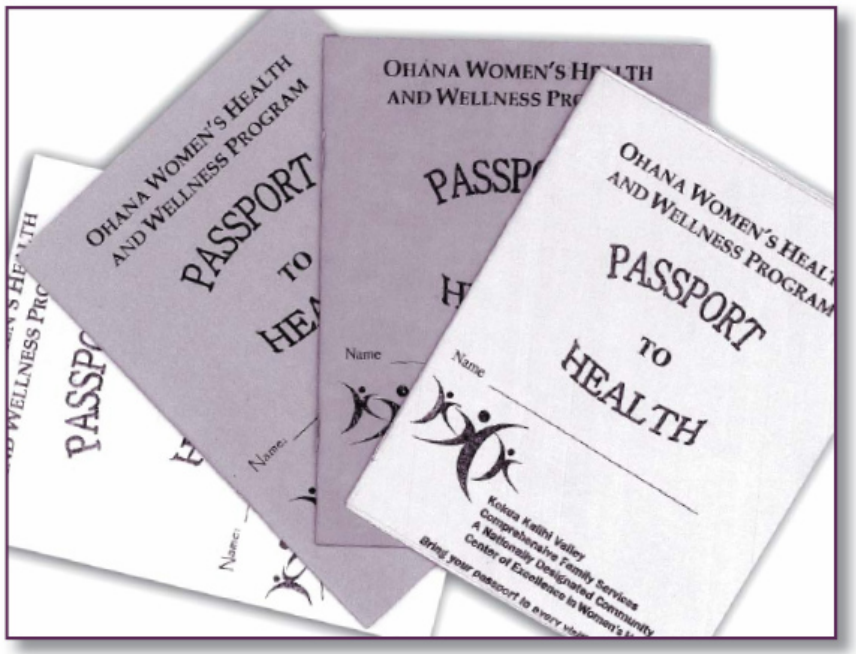
increase knowledge of, and thus use of, current guidelines (Office on Women's Health 2003).

- Northeast Missouri Health Council, Inc. (MO) offered continuing medical education courses for rural physicians and nurses on women's health issues. These classes were well received since rural health professionals have few opportunities to receive training in their own communities (Office on Women's Health 2003).

- **Patient education resources/lay education:** Patient education has been shown to improve care (Torrey, Finnerty et al. 2003; Backer, Geske et al. 2005). As noted, the OWH specifically encouraged Centers to engage in such patient education efforts, and all the CCOEs responded

FIGURE 3

Kokua Kalihi Valley Comprehensive Family Services (HI)



Member Information
Kokua Kalihi Valley
Community Center of Excellence
In Women's Health

Name _____

Photo

Date of Birth: _____

Address: _____

_____

Phone Number: _____

Date enrolled _____

Allergies _____

Insurance _____

Next Appointment

Date Program Provider	Date Program Provider
Date Program Provider	Date Program Provider
Date Program Provider	Date Program Provider
Date Program Provider	Date Program Provider
Date Program Provider	Date Program Provider

Date	Cholesterol	PAP/ Pelvic	Mammogram

Health Goal	Recommendations

by creating patient education opportunities. Implemented most commonly were health fairs, women's days, target group lunches, health topic-specific workshops, event calendars, and vans sent into the community (e.g., to provide free screenings). Specific examples from some of the CCOE's efforts follow:

- The Mariposa Community Health Center (AZ), Kokua Kalihi Valley Comprehensive Family Services (HI), and St. Barnabas Hospital and Healthcare System (NY) implemented Passport Guides, which were provided to each patient enrolled in the CCOE (Office on Women's Health 2003). These guides enabled easier referrals, efficient tracking of services by multiple providers, and a means for the patient herself to record and retain relevant health information, such as test results or appointment schedules. For example, the Kokua Kalihi Valley Comprehensive Family Services (HI) included passports in enrollment packages that were designed in four separate, age-appropriate formats (see Figure 3). Each passport provided health tips and forms for tracking health and wellness services and other information provided to the patient. Moreover, the passports, each personalized with a small Polaroid photo of the woman and color-coded by age group, have been helpful to physicians and other care providers in understanding the women's medical history, especially when language is a barrier.
- Greeley County Health Services (KS) recently sponsored a Women's Health Conference to bring together "medical professionals and experts from across the state" to provide information to members of the public and professionals. Scholarships were given to local students to attend the conference (Office on Women's Health 2005-2007). Greeley County Health Services (KS) also helped to convene a first-ever kids' health fair for its community. The event was widely attended and received significant support. Every child who participated received at least one gift, and most received multiple gifts.
- Northeast Missouri Health Council, Inc. (MO) created an award-winning patient education newsletter, Health Words for Women. The Center mails newsletters to enrolled women, and distributes them via clinic sites, partner agencies, and area health departments. The Center distributes approximately 2,000 newsletters per quarter (see Figure 4) (Office on Women's Health 2005-2007).
- Jefferson Health System (AL) conducted numerous patient outreach events, including classes and blood pressure screenings (Office on Women's Health 2005-2007).
- Oakhurst Medical Centers, Inc. (GA) has a "Wellness on Wheels Van" that provides reduced-rate mammograms and diagnostic services for women (Office on Women's Health 2005-2007). Christiana Care Health System (DE) and Griffin Hospital (CT) also utilize mobile health vans to deliver preventive health services to the community.
- The Mariposa Community Health Center (AZ) specifically included physicians, as opposed to only nurses and allied health professionals, in direct-to-patient, community-level services, which increased the visibility of the providers and enabled increased face-to-face interactions between the physicians and community members.

- **Self-assessment surveys:** Periodic internal assessments and evaluations are an important component of successful systems change efforts (Emshoff, Darnell et al. 2007). All the CCOEs

FIGURE 4

Northeast Missouri Health Council, Inc. (MO)

Dental care and diabetes: Guide to a healthy mouth

You must practice good oral hygiene when you have diabetes. Follow your dentist's advice to avoid serious complications.

Elevated blood sugar levels can damage many parts of your body, including your mouth and teeth. Diabetes increases your risk of gum disease, cavities, tooth loss, dry mouth and oral infections.

Shoeleh Navab-Hamidi, D.D.S.

Poor oral health can also make diabetes more difficult to control. Infections can cause blood sugar to rise and require more insulin to stay under control.

Diabetes can diminish the ability to taste sweets. Although this may not be noticeable, it can influence diet choices. An uncontrollable sweet tooth may have you reaching for sugar-packed foods, affecting your dental health and your diabetes.

As part of FQHC services, Northeast Missouri Health Council (NMHC) is entering into a Health Disparities Collaborative for diabetes and ensuring that all patients have access as part of their treatment plan.

Shoeleh Navab-Hamidi, D.D.S., started with NMHC in August 2007. Dr. Hamidi received her degree from the University of Missouri School of Dentistry in Kansas City, Mo. She and her family recently moved from New Mexico where she was a staff dentist at La Clinica de Familia Inc. Dental Clinic. Dr. Hamidi is a National Health Service Corps Scholar.

Make an appointment with Dr. Hamidi by calling the Northeast Missouri Dental Clinic at **660-626-2741.**

Check out the federal Office on Women's Health at **www.womenshealth.gov** or **www.girlshealth.gov**

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National Community Centers of Excellence in Women's Health

Winter 2007

healthwords for women

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VOLUME 16 • ISSUE 4

THE BEAST WITHIN
Banish the fat that's your biggest health threat

Build a better framework to protect your bones

A CHANGE IS GONNA COME
How to tell when menopause is near

PROBIOTICS
A natural remedy for beating bellyaches

engaged in such periodic internal assessments. (These activities are discussed in more detail in the Evaluating Change Efforts section.)

- **Cultural/literacy barrier adaptations:** Specific and tailored cultural initiatives have been shown to improve care (Cooper, Hill et al. 2002; Miranda, Duan et al. 2003; Centers for Disease Control and Prevention 2007). CCOEs have exhibited particular strengths in this area. Examples include:

    - Griffin Hospital (CT) "established a medical interpreter initiative which is now a statewide collaborative," and was the first hospital in Connecticut to employ a certified interpreter (the CCOE was vital in hiring and training this interpreter) (Office on Women's Health 2005-2007). The Center also is engaging in a Multicultural Health Initiative to increase access for women with limited English skills. The effort involves: 1) assessing current interpreter practices; 2) assessing consumer response to services; 3) assessing organizational readiness for cultural competence training; 4) identifying programs to train new interpreters; 5) identifying cultural competence trainers; and 6) identifying access barriers among limited English speakers (Office on Women's Health 2005-2007).

- Oakhurst Medical Centers, Inc. (GA) has used "strong partnerships with local organizations such as refugee services institutions" to link refugee patients with CCOE care, social services, and cultural support" (Ettinger 2007).
- St. Barnabas Hospital and Healthcare System (NY) has extensively used interpreters and has found that the use of interpreters helped to both build patient relationships and "establish trust within ethnic communities" (Ettinger 2007).
- Kokua Kalihi Valley Comprehensive Family Services (HI) "staffs a group of community health workers who are fluent in 17 languages and provides medical interpretation and cross-cultural pregnancy training" (Ettinger 2007).
- Christiana Care Health System (DE) "hired a part time health advocate to specifically address the complex needs of women who are homeless … [the] program utilizes a team approach to address complex needs and includes health talks at the day center, transportation and financial screening and social work assistance" (Office on Women's Health 2005-2007).

◆ **Community programs for health:** Community coalitions help to support and sustain change efforts (Emshoff, Darnell et al. 2007). CCOEs have been very successful in leveraging community resources and services to reach goals and broaden their services. Several examples of these efforts follow:

- Hennepin County Department of Primary Care/North Point Health and Wellness Center (MN) has established an extensive network of support resources, including "a large food bank, the Gateway program for troubled families, dental, optometry, behavioral health services, and financial counseling services" (Ettinger 2007). The Center also has a cardiovascular care management program to address the medical and social needs of women, including personalized coaching and care instruction, which utilizes community resources (Office on Women's Health 2005-2007).
- St. Barnabas Hospital and Healthcare System (NY) has "developed relationships with partners who are able to deliver support services such as mental/behavioral health, domestic violence support, and elder care while understanding the Hispanic/Latino culture within its community" (Ettinger 2007).
- Morton Plant Hospital/Turley Family Health Center (FL) has broadened its community outreach efforts to provide services for women and their families. The Center has built "an effective pediatric practice as women return with their children" and as a result "has high rates of preventive services, such as immunization coverage" (Ettinger 2007).
- Northeastern Vermont Area Health Education Center (VT) participates in a Fit and Healthy Coalition consisting of many community organizations, which seeks to promote healthy communities (Office on Women's Health 2005-2007).

In addition to the nine best practices identified in the literature, we also uncovered several systems change approaches that are currently underutilized or unevaluated. CCOEs have been employing some of these techniques and may eventually contribute to the literature on the effectiveness of such interventions.

In particular, CCOEs may have lessons learned related to:

- **Information technology:** Information technology may hold promise in helping to implement and sustain change efforts, but it remains underutilized (there are limited data on its effectiveness) (Roski, Jeddeloh et al. 2003). Some CCOEs have employed such technologies and are collecting relevant data on this topic. For example, NorthEast Ohio Neighborhood Health Services, Inc. (OH) is developing a new appointment system so that patients can call one number to make appointments with any of several departments (Office on Women's Health 2005-2007). The system has not yet been evaluated to determine whether it is improving health or other outcomes.
- **Cultural training:** Cultural training appears to improve staff attitudes, but its effect on care outcomes is still relatively unevaluated (Beach, Price et al. 2005). Thus, it is noteworthy that the Morton Plant Hospital/Turley Family Health Center (FL) employed a consultant for cultural competency and testing of cultural awareness by providers (Office on Women's Health 2003). The result of this effort on care outcomes is not yet known.

CCOE LESSONS LEARNED

As part of their ongoing reporting requirements to the OWH, CCOEs were asked to describe lessons learned related to their efforts to implement systems change. These lessons focused on methods to achieve success, and Centers provided advice for others attempting similar change efforts. Overall, these lessons coincide with many suggestions outlined in the literature and may be viewed as the best-practice advice the CCOEs would provide to others.

Ten common lessons were identified by multiple Centers (Office on Women's Health 2003):

- **Importance of a practice coordinator/facilitator:** Northeast Missouri Health Council, Inc. (MO), Morton Plant Hospital/Turley Family Health Center (FL), Christiana Care Health System (DE), and Hennepin County Department of Primary Care/North Point Health and Wellness Center (MN) specifically identified the presence of a coordinator as a best practice for their initiatives. In particular, Northeast Missouri Health Council, Inc. (MO) developers believed that the coordinator role was important enough to warrant the hiring of a full-time professional for this position, and Hennepin County Department of Primary Care/North Point Health and Wellness Center (MN) identified the use of a coordinator from the very start of the program as crucial to its success.
- **Team building and communication:** Northeast Missouri Health Council, Inc. (MO), Christiana Care Health System (DE), and Morton Plant Hospital/Turley Family Health Center (FL) identified team building and the need to share resources at the earliest stages as important lessons for future start-up Centers.
- **Partner communication and relationship building:** Northeast Missouri Health Council, Inc. (MO), NorthEast Ohio Neighborhood Health Services, Inc. (OH), Christiana Care Health System (DE), and Griffin Hospital (CT) identified the need to spend time developing strong community relationships/community visibility as crucial to their successes. In particular, Griffin Hospital (CT) emphasized the need to trust the community and to establish partners early on to sustain the initiative.

- **Adaptability and "thinking outside the box":** Northeastern Vermont Area Health Education Center (VT) and NorthEast Ohio Neighborhood Health Services, Inc. (OH) stated that program development staff and partners must be willing to change their focus and goals to adapt to required needs and available resources. NorthEast Ohio Neighborhood Health Services, Inc. (OH) specifically identified creative brainstorming for solutions as important to successful implementation.

- **Awareness of scope:** Northeastern Vermont Area Health Education Center (VT) and Women's Health Services (NM) identified the need to start small and build upon the initiative as an important lesson. In particular, Women's Health Services (NM) suggested that goals should be prioritized and implemented gradually and only after the required funding is obtained.

- **Integration:** Kokua Kalihi Valley Comprehensive Family Services (HI) and Hennepin County Department of Primary Care/North Point Health and Wellness Center (MN) identified integration as important to their successes. Kokua Kalihi Valley Comprehensive Family Services (HI) suggested that leadership integration was key; Hennepin County Department of Primary Care/North Point Health and Wellness Center (MN) was the only Center to specifically identify the integration of OWH's core components as important to long-term success.

- **Time management:** Many Centers identified the need for more time during different stages of implementation. NorthEast Ohio Neighborhood Health Services, Inc. (OH), Christiana Care Health System (DE), Morton Plant Hospital/Turley Family Health Center (FL), Mariposa Community Health Center (AZ), and Hennepin County Department of Primary Care/North Point Health and Wellness Center (MN) identified the need for more time in the initial development stage of the program; Northeastern Vermont Area Health Education Center (VT) described patience regarding initiative development (e.g., for implementation, partnership building, and successes revealed) as a key lesson learned. Christiana Care Health System (DE) and Mariposa Community Health Center (AZ) noted the lengthy time needed to develop tracking systems or database management systems and suggested that similar organizations plan on a longer time frame to develop such systems. Hennepin County Department of Primary Care/North Point Health and Wellness Center (MN) further suggested the need to establish tracking systems first because of the length of time necessary to develop the system and to train staff. Morton Plant Hospital/Turley Family Health Center (FL) suggested the need to identify coordinators and partners early on because of the length of time needed to establish those positions and roles.

- **Use of established resources:** NorthEast Ohio Neighborhood Health Services, Inc. (OH), Morton Plant Hospital/Turley Family Health Center (FL), and Hennepin County Department of Primary Care/North Point Health and Wellness Center (MN) suggested that implementations were most successful when available resources in the practice or community were used instead of beginning "from scratch." In particular, NorthEast Ohio Neighborhood Health Services, Inc. (OH) cited a better response to programs that built upon already established (thus, already visible to the community) efforts. These three Centers further suggested that sharing resources with community partners was successful (i.e., it increased efficiency, solidified partnerships, etc.).

- **Full program development before extending or modeling:** Griffin Hospital (CT) and to a

lesser extent Women's Health Services (NM) suggested that providing technical assistance to others, or establishing numerous partnerships, may be too much of a strain on the continuation of their own programs.

- **Obtaining support from other partners:** NorthEast Ohio Neighborhood Health Services, Inc. (OH) was novel in its recommendation that active support of partner organization events was a best practice for the success of its program. Its view was that participation of partners benefited both NorthEast Ohio Neighborhood Health Services, Inc. (OH) and the organization's initiatives, solidified the partnerships, and increased visibility. Despite difficulties in fulfilling this goal at times, the team members identified this lesson as important to sustained success.

CCOE CHALLENGES AND RECOMMENDATIONS

In addition to the lessons learned, each Center also reported on its challenges, including how challenges were resolved. Two main challenges were noted. First, the difficulty of establishing tracking software was identified both because of the length of time to develop such software and because of the cost of development (planning for additional development time was noted as a recommendation above). Second, provider issues related to turnover, small staff size, or lack of support were barriers for at least five of the 12 reporting sites.

For example, at Women's Health Services (NM), a lack of buy-in from providers, poor leadership, and poor staff communication (including a lack of mutual respect) were large barriers to the Center's initial success. This Center struggled on many levels to provide care, to track patients and interventions, and to adapt and plan dynamically. These struggles may be a direct reflection of poor early leadership, communication, and partnership outreach, and emphasize why such elements are critical to success. However, the Center overcame these struggles and eventually became a model for the Governor's Women's Health Initiative.

In addition to these challenges, the Centers also offered six main recommendations that are specific to the CCOE program and were directed at OWH:

- Data uniformity and a standard tracking method for all Centers were requested by Northeastern Vermont Area Health Education Center (VT), Morton Plant Hospital/Turley Family Health Center (FL), and Women's Health Services (NM).
- The vast scope of the OWH program was a challenge for many Centers, and inhibited their ability to focus on achieving goals and integrating components, as noted by Kokua Kalihi Valley Comprehensive Family Services (HI), Hennepin County Department of Primary Care/North Point Health and Wellness Center (MN), and Women's Health Services (NM).
- The need for more communication with the other Centers, including the suggestion to establish a "buddy system" among Centers, was identified as a practice that would greatly improve the ability of each site to implement program changes. NorthEast Ohio Neighborhood Health Services, Inc. (OH), Christiana Care Health System (DE), and Women's Health Services (NM) especially noted the potential usefulness of this type of collaboration. Such cross-center communication can be a valuable way to share lessons learned and to obtain suggestions for alternative ways of addressing barriers to change.

- The difficulty of providing technical assistance and replicating the program (an OWH requirement) during what was effectively still the pilot period of each CCOE was noted by almost all Centers, and especially by Griffin Hospital (CT), Morton Plant Hospital/Turley Family Health Center (FL), and Hennepin County Department of Primary Care/North Point Health and Wellness Center (MN).
- The small amount of OWH funding in proportion to the great number of goals and components to be implemented was another challenge identified, especially by Christiana Care Health System (DE), Hennepin County Department of Primary Care/North Point Health and Wellness Center (MN), and Women's Health Services (NM). Although nearly all Centers successfully recruited other sources of funding through partnerships or grants, Centers emphasized the need to provide greater funding at the outset to improve their ability to achieve long-term program success (e.g., tracking systems). (The OWH believed that the small amount of funding provided to start the Centers would make it easier for them to sustain themselves.)
- Christiana Care Health System (DE), Morton Plant Hospital/Turley Family Health Center (FL), Mariposa Community Health Center (AZ), and Hennepin County Department of Primary Care/North Point Health and Wellness Center (MN) specifically noted that a phase-in of the OWH goals and components would increase the likelihood of success of each Center and of each initiative. The complexity of implementing all initiatives at once was a challenge noted in literature models as well; the suggestion of these Centers to implement everything—but in stages—addresses this complexity and may increase the chances of each Center accomplishing all of the goals eventually.

Two Centers, Oakhurst Medical Centers, Inc. (GA) and Greeley County Health Services (KS), were established after the 2003 interim program evaluation, and so feedback from these Centers is not included above. However, in reports on the early stages of each Center's development, both appeared to be facing similar challenges and applying similar initiatives as the 12 previously reported Centers. For example, financial constraints reduced staffing levels at Oakhurst Medical Centers, Inc. (GA). The Center implemented a crucial step for success, however, by hiring a consultant to assist with outreach and target population education. Through the efforts of the consultant, the Center succeeded in obtaining important community partners and in establishing a community hip hop youth health fair.

SUSTAINING CHANGE EFFORTS

One of the most difficult components of systems change is sustaining efforts over time. As key personnel leave, initial funding sources are reduced or eliminated, and staff members become less motivated, efforts may falter. The CCOEs are no exception and have encountered many of these difficulties. Some Centers have been more successful than others in addressing these challenges to ensure that they will continue beyond the initial OWH funding period.

Some best practices identified in the literature to sustain change, and the CCOE's approach to each of these efforts, are described below:

- **Adapting to changes over time:** Since health systems are constantly changing, one characteristic of successful change efforts is that they are able to evolve over time. All of the CCOEs had to deal with challenges, including the loss of key personnel, changes in programming, and

other difficulties. Some of the Centers have been very successful in dealing with such changes. For example:

- NorthEast Ohio Neighborhood Health Services, Inc. (OH) is continually adapting to better serve its women, including opening new locations to address access barriers (Office on Women's Health 2005-2007).
- Kokua Kalihi Valley Comprehensive Family Services (HI) reports that its efforts have changed over time as needs have changed: "In year one, a comprehensive screening tool was developed … to facilitate the provision of seamless holistic services. In year two, an abbreviated re-enrollment tool [and] a modified enrollment tool for the elderly population (60 and over) were developed. In year 4 a modified enrollment tool was developed specifically looking at teens and their needs" (Office on Women's Health 2005-2007).
- Griffin Hospital (CT) has experienced three changes in its medical director, but it has been able to successfully recruit for this position each time (Office on Women's Health 2005-2007).
- St. Barnabas Hospital and Healthcare System (NY) reported dealing with the principal investigator's retirement, the project manager's transition from full time to part time, and a reorganization (Office on Women's Health 2005-2007). All of these transitions created institutional memory loss, as well as lost documents and other materials. A new management team was installed to help address some of these problems (Office on Women's Health 2005-2007).

- **Frequent discussion of problems that arise and openness in communication among all affected parties:** Likewise, successful change efforts have regular communications among key parties to address problems and to adapt as needed. For example, Morton Plant Hospital/Turley Family Health Center (FL) uses weekly team huddles to build a more cohesive, productive, efficient team (Office on Women's Health 2005-2007). And Christiana Care Health System (DE) has "weekly or bi-monthly meetings with [the] CCOE Medical Director; monthly meeting with [the] CCOE Project Director; monthly clinical care meetings; [and] quarterly Community Partner Meetings" (Office on Women's Health 2005-2007).
- **Dealing with changes in funding sources:** Perhaps the biggest challenge that initiatives encounter is changes in funding sources. This is a crucial issue for the CCOEs, many of which are now at the end of their OWH funding periods. Most CCOEs leveraged their CCOE status to some extent to receive additional funding. However, planning for continued funding was integrated to different degrees at each Center, and some Centers are still in the early planning stages of fund leveraging. With the impending loss of OWH funding, many CCOEs had to prioritize and refocus their services, emphasizing the most effective programs or components of the CCOE program. Others have relied on developing relationships with partners (e.g., academic centers) to obtain additional funding (Ettinger 2007). CCOEs' experiences related to addressing funding changes (some of which have been more successful than others) include the following:
  - Hennepin County Department of Primary Care/North Point Health and Wellness

Center (MN) is applying for new revenue sources and is "beginning the process of care management for women which will be billable services, making the CCOE a revenue provider to keep the program up and running" (Office on Women's Health 2005-2007).

- Women's Health Services (NM) has extensively leveraged partnerships and resources to sustain itself, including financial assistance from partners and partner assistance in recruiting physicians and patient referrals, securing donated air time for public service information, assistance from the state/county in purchasing its building in exchange for services to indigent community members, funding from the New Mexico Department of Health to operate the Center, and funding from foundations (Office on Women's Health 2005-2007).
- Greeley County Health Services (KS) reports that sustainability is a struggle: It will be able to "continue to fund the patient educator/program coordinator position although some of the gender specific emphasis may be redirected to the general population" (Office on Women's Health 2005-2007).
- Northeastern Vermont Area Health Education Center (VT) created a unique Memorandum of Understanding (MOU) with its partnering healthcare provider, which identified an annual percentage of funds contributed by the CCOE. The funding amount decreased over time, resulting in a seamless handoff to the hospital when CCOE funding ended. This led to a sustainable program, because the CCOE demonstrated the benefit (cost and outcomes) of the Women's Resource Network to the hospital CEO and CFO.
- NorthEast Ohio Neighborhood Health Services, Inc. (OH) developed the Women's Health Consortium, a strong network of partners, which includes mental health, domestic violence, Case Western University, as well as other organizations. This partnership has jointly sought and applied for grant opportunities in order to continue and expand its CCOE programming which will enable the continuation of Center activities. The Center has evaluated the effectiveness of this consortium (see sample survey, Figure 5).
- Griffin Hospital (CT) has "diversified its services to include self-pay and privately insured patients in order to sustain services and health education programming for the under/uninsured patient population they currently serve" (Ettinger 2007). The Center director and program coordinator (facilitator) position will be paid by the hospital.

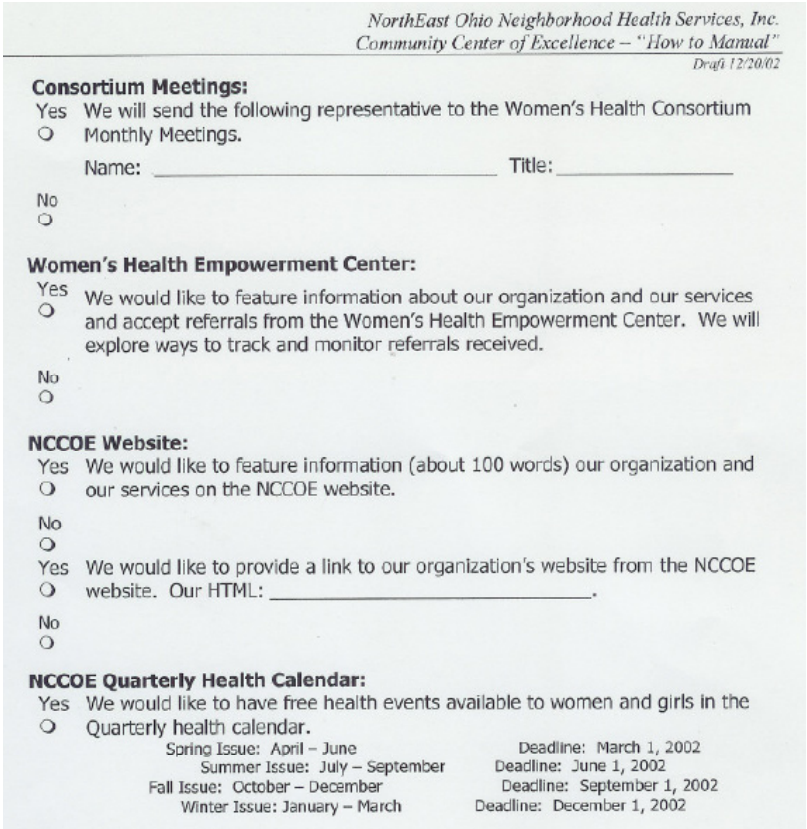
EVALUATING CHANGE EFFORTS

As an OWH grant requirement, all CCOEs were required to conduct evaluations of their programs. The literature review identified three main components in conducting successful evaluations, and the CCOEs addressed all three of these measures, although some in more detail than others:

- **Early planning for evaluation:** Early planning is critical to evaluation success. As noted, all CCOEs were required to report periodically to OWH, so all Centers included such reporting in their initial planning.

FIGURE 5

NorthEast Ohio Neighborhood Health Services, Inc. (OH)



NorthEast Ohio Neighborhood Health Services, Inc.
Community Center of Excellence – "How to Manual"
Draft 12/20/02

Consortium Meetings:

Yes ❍ We will send the following representative to the Women's Health Consortium Monthly Meetings.

Name: _____ Title: _____

No ❍

Women's Health Empowerment Center:

Yes ❍ We would like to feature information about our organization and our services and accept referrals from the Women's Health Empowerment Center. We will explore ways to track and monitor referrals received.

No ❍

NCCOE Website:

Yes ❍ We would like to feature information (about 100 words) our organization and our services on the NCCOE website.

No ❍

Yes ❍ We would like to provide a link to our organization's website from the NCCOE website. Our HTML: _____.

No ❍

NCCOE Quarterly Health Calendar:

Yes ❍ We would like to have free health events available to women and girls in the Quarterly health calendar.

Spring Issue: April – June	Deadline: March 1, 2002
Summer Issue: July – September	Deadline: June 1, 2002
Fall Issue: October – December	Deadline: September 1, 2002
Winter Issue: January – March	Deadline: December 1, 2002

- **Short- and long-term measures of success:** Successful evaluation efforts include both short-term and long-term measures of success. All CCOEs reported quarterly or annually to OWH on measures such as the number of community presentations made, sponsorship of classes and activities within the community, patients served, services provided, and the provision of other services such as transportation, etc. (Office on Women's Health 2005-2007). In addition to these more routine measures, several Centers collected more detailed information related to health outcomes. However, as noted, Centers reported that it took longer than anticipated to develop the systems to track these efforts. Centers also collected other types of data. For example, Northeastern Vermont Area Health Education Center (VT) used surveys to track satisfaction at community events and lectures sponsored, including intended behavioral changes (e.g., intentions to take recommended actions to reduce stress) (Office on Women's Health 2005-2007). Women's Health Services (NM) used patient surveys and focus groups to track patient satisfaction (Office on Women's Health 2005-2007).
- **Reporting metrics:** A final consideration related to evaluation is how to report data. Here, Centers used a variety of approaches. For example, Northeastern Vermont Area Health Education Center (VT) flags the billing records of women who enroll in the CCOE, and then uses that data to show "the number of visits CCOE women have at Women's Wellness during the specified time period as well as other services received at the hospital (lab, x-ray, etc.)"

CONCLUSION

Systems change efforts require complex and dynamic planning for even the smallest changes, and the long-term continuation of such changes requires even more foresight. The CCOEs, as a large-scale national effort to undertake systems change at 14 unique locations, reflect the complex planning needed to integrate established health care resources.

The CCOEs exhibited many policies that reflect best practices in systems change, including prior needs assessments; association of goals/outcomes and intervention themes; the use of an existing systems change model; and plans to replicate or to become a model for other such initiatives. At the same time, OWH provided very limited grant funding per year. It was OWH's hope that this limited funding would provide initial resources for Centers, but that Centers would be able to secure additional funding to support their long-term viability.

The individual CCOEs attempted to implement, or succeeded in implementing, a number of best-practice initiatives. The following broad requirements for successful change were addressed by each Center to varied degrees: leadership establishment, practice facilitator/program coordinator establishment, and community partnerships; professional and lay education provision; targeted patient population identification and engagement by outreach; establishment of methods of documentation; and adaptability/flexibility applied in a dynamic health care setting. In addition, the Centers' descriptions of their successes and struggles provided insight into the differences inherent in diverse health care settings and patient populations.

The CCOEs developed a unique approach to systems change by using existing resources and members of individual communities to implement health care improvements rather than implementing changes in a single practice setting. Because the program includes 14 separate Centers serving diverse communities and populations, it allows for direct comparisons of successes and challenges faced by individual Centers and serves as an example of common and divergent elements required to achieve the same goals. In addition, because these Centers are now embarking on sustainability challenges, the lessons learned from and successes achieved by these Centers can be compared and analyzed to serve as models of repeatability for similar ventures in other communities.

Feedback from the CCOE sites to OWH mirrors important lessons described in the literature, including the importance of a site facilitator for efficiency, a structured model on which to base initiatives, planning for secondary funding early in program implementation, and outlining the steps necessary to implement programs as a team. Centers contributed to the existing literature on systems change implementation by providing advice that proved crucial to their successes, no matter what type of setting or target population was addressed. In particular, the Centers emphasized the need to focus on attaining certain goals with specific

components/initiatives, rather than attempting multiple projects and failing to initiate or continue any of them, and the need to implement interventions in a dynamic, step-wise manner, rather than considering the program achievable all at once.

Another noteworthy insight from the CCOEs is that increased inter-program communication among the Centers themselves, including perhaps a "buddy system," could have reduced challenges and improved performance as a result of increased brainstorming and feedback. This concept is unique from that of model-serving or repeatability, and it has not been addressed thoroughly in the literature to date. The CCOEs may potentially contribute to this literature by increasing communication among existing sites as they face sustainability concerns and by reporting on the impact of these communications on the individual Centers.

What do the CCOEs' experiences model for other practices embarking upon systems change? First, a difference in approach may be required to achieve the same goals, because of site- and patient-specific needs and resources, and because different approaches (e.g., chart reminders on paper vs. technologically advanced database reports) can all succeed in effecting a change when team members remain engaged. Second, staff concerns (e.g., lack of interest, poor communication, or a small number of providers) are a large barrier to efficient and successful change implementation. Having key personnel in charge of the initiative (i.e., a site director, a program facilitator, and a community lay worker as a bridge to the population) are large contributors to the success of change initiatives. Third, systems change takes a long time to implement, and thus must be planned for dynamically and funded appropriately. Addressing funding requirements early on for specific interventions is suggested as a means of achieving sustainability beyond the pilot program.

Most specifically, the CCOEs exemplify the integration of existing community services in diverse settings to meet the needs of underserved populations. These Centers successfully addressed the connection between wellness programming and patient involvement/empowerment by providing care and adaptations to reduce cultural, language, and literacy barriers that are faced in many of these settings. Each Center partnered with local non-health organizations to provide patient outreach, education, and empowerment, and numerous Centers adapted these initiatives and clinic programs to address language barriers. What remains for long-term assessment of the Centers' successes is to evaluate intervention-specific effects, such as the number of women returning for follow-up visits; the number of mammography exams performed; or a comparison of diabetes rates in communities that implemented weight control initiatives. A report of these types of results would provide qualitative (comparison-based) and quantitative (statistics-based) support for the success of the integrated provision model of systems change.

The experiences reported by the CCOEs provide examples of systems change at different developmental stages and in differing patient populations, circumstances, and geographic settings. In addressing the challenges and repeatability concerns they faced, the Centers mirrored and expanded upon literature models of systems change implementation. In doing so, they have contributed to the discussion of best practices in health care systems change and might serve as a model for others.

APPENDIX A

Profile of National Community Centers of Excellence in Women's Health

	NATIONAL COMMUNITY CENTER OF EXCELLENCE	FEDERAL REGION	LOCATION	ORGANIZATION TYPE	PRIMARY CLIENT LANGUAGES
Year 1 (2000)	Mariposa Community Health Center (AZ)	Region IX	Rural	Community Health Center	English, Spanish
	Northeast Missouri Health Council, Inc. (MO)	Region VII	Rural	Community Health Center	English, Spanish
	St. Barnabas Hospital and Healthcare System (NY)	Region II	Urban	Hospital	English, Spanish
Year 2 (2001)	Hennepin County Department of Primary Care/North Point Health and Wellness Center (MN)	Region V	Urban	Community Health Center	English, Hmong, Laotian, Spanish
	NorthEast Ohio Neighborhood Health Services, Inc. (OH)	Region V	Urban	Community Health Center	English
	Northeastern Vermont Area Health Education Center (VT)	Region I	Rural	Area Health Education Center	English
	Women's Health Services (NM)	Region VI	Urban	Community-based Organization	English, Spanish
Year 3 (2002)	Christiana Care Health System (DE)	Region III	Urban	Hospital	English, Spanish
	Griffin Hospital (CT)	Region I	Suburban	Hospital	English, Polish, Spanish
	Jefferson Health System (AL)	Region IV	Urban	Hospital	English, Spanish
	Kokua Kalihi Valley Comprehensive Family Services (HI)	Region IX	Urban	Community Health Center	Chinese, Chuukese, English, Marshallese Laotian, Phonpeian, Samoan, Tagalog, Thai, Ilocano, Vietnamese, Visayan
	Morton Plant Hospital/Turley Family Health Center (FL)	Region IV	Suburban	Hospital	English, Spanish
Year 4 (2003)	Greeley County Health Services (KS)	Region VII	Rural	Community-based Organization	English, German, Spanish, Tagalog
	Oakhurst Medical Centers, Inc. (GA)	Region IV	Urban	Community Health Center	English, Spanish, Somali, Maay Maay, Arabic, Urdu, Oromo Berundi, Korean

Based, with permission, on a table in the National Community Centers of Excellence in Women's Health: Program Evaluation Executive Summary (Office on Women's Health 2004).

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